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EXAMINER				
BONZELL, PHILIP J				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/594,979

Applicant(s)

RIEKEN ET AL.

Examiner

PHILIP J. BONZELL

Art Unit

3644

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-24 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/29/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date 9/29/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 11 recites the limitation "the chord lines" in the second line. There is insufficient antecedent basis for this limitation in the claim.
2. Claim 16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the second line of the claim, the phrase "two pail's" is not clear, the Examiner is taking that to read as --to pairs--with that change in mind, the claims is still indefinite as it is not clear where the two pairs of rear ailerons are located.
3. Claim 23 recites the limitation "the pylon" in line three. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, and 5 rejected under 35 U.S.C. 102(b) as being anticipated by Jones (US Patent #5520355).

- a. For Claim 1, figure 1 discloses an aircraft (20) with a boomerang shaped front wing (21) curving gibbously to a front of the aircraft which has a leading edge, a trailing edge and a first and second airfoil tips and a boomerang shaped rear wing (22) curving gibbously to a back of the aircraft, which has a leading edge, a trailing edge and a third and fourth airfoil tips. Figure 1 also discloses a first wing box (23L) connecting the first airfoil tip of the front wing (21) to the third airfoil tip of the rear wing (22) and a second wing box (23R) connecting the second airfoil tip of the front wing (21) to the fourth wing tip of the rear wing (22). Figure 1 discloses that the trailing edge of the front wing, the leading edge of the rear wing and the internal surfaces of the wing boxes form a center opening.
- b. For Claims 2 and 5, figure 1 teaches the center opening is substantially elliptical.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) as applied to claim 1 above, and further in view of Garrett (US Patent #5899410).

c. For Claims 3 and 4, Jones '355 is silent about the center opening being polygonal or rhombus; however, figure 4a of Garrett '410 teaches the center opening as being both polygonal and a rhombus. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with the center opening of Garrett '410 in order to allow for different configurations of the aircraft to that it creates more lift.

d. For Claim 16, while figure 2 of Jones '355 disclose a pair of ailerons (37R and 37L) on the front wing of the aircraft, it is silent about two pairs of ailerons, however, figure 7B of Garret '410 teaches two pair of ailerons (30a and 30b). Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with two pairs of ailerons as in Garrett '410 in order to have redundancy.

6. Claims 6, 8, 17-21, and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) as applied to claim 1 above, and further in view of Gebhard (US Patent #5145129).

e. For Claim 6, figure 2 of Jones '355 discloses a propeller (29) in the center opening but is silent about the use to multiple propellers, however, figure 1 of Gebhard '129 teaches the use of two propellers (24 and 26) in the center

opening. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with the propellers of Gebhard '129 in order offset momentum forces.

f. For Claim 8, while neither Jones '355 nor Gebhard '129 teach that the speed of each engine can be controlled independently, the Examiner takes Official Notice that the use of independent propellers is well known and used in the art in order to have optimum control of the propellers as well as to have a redundancy. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to have independent propellers to make the aircraft safer.

g. For Claim 17 and 18, figure 2 of Jones '355 discloses vertical fins (28L and 28R) which are behind the engine and include rudders (33L and 33R).

h. For Claim 19, figure 2 of Jones '355 discloses drag rudders (38L and 38R) on the rear wing.

i. For Claim 20, figure 2 of Jones '355 clearly discloses that the center of gravity would be in front of the center of the aircraft.

j. For Claim 21, figure 2 of Jones discloses that the front wing has a different area then that of the rear wing.

k. For Claim 23, Jones '355 is silent about a central body being connected to a pylon and only on of the front or rear wing, however, figure 1 of Gebhard '129 teaches a central body (24 and 26) and connected to the front wing (20) through a pylon. Therefore it would have been obvious to someone of ordinary skill in the

art at the time of the invention to modify Jones '355 with the mounting of a central body as taught in Gebhard '129 in order to provide a mount that is sturdy but also has a low weight.

7. Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355 as applied to claim 1 above, and further in view of Whitener (US Patent #4165058). Jones '355 is silent about the use of jet engines on the aircraft, however, figure 2 of Whitener '058 teaches jet engines (121 and 122). Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with the engines of Whitener '058 in order to have an aircraft with more powerful engines.

8. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) as applied to claim 1 above, and further in view of Bignan (FR Patent #1444868).

I. For Claims 9 and 10, Jones '355 is silent about the chord lines of the front and rear wing being inclined, however, figures 2 and 3 of Bignan '868 teaches that the front and rear wings have inclined chord lines. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with the wing design of Bignan '868 in order to have improved flight characteristics for the aircraft.

m. For Claim 11, Jones '355 is silent about the angles of the chord lines of the front and rear wings differing along a wingspan direction, however, figures 2 and 3 of Bignan '868 teach that the chord lines vary in the wingspan direction. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with the wing design of Bignan '868 in order to have improved flight characteristics for the aircraft.

9. Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) in view of Gebhard (US Patent #5145129) as applied to claim 6 above, and further in view of Whitener (US Patent #4165058).

n. Both Jones '355 and Gebhard '129 are silent about the engines being supported by pylons that are connected to the wing boxes, however, figure 2 of Whitener '058 teaches engines (121 and 122) that are supported by pylons (123 and 124) that are connected to the aircraft at wing boxes (111 and 112). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jones '335 and Gebhard '129 with the two engines and a connection structure of Whitener '058 in order to create a strong mounting system.

o. Jones '355, Gebhard '129, and Whitener '058 are silent about a fuel system, however, the Examiner take Official Notice that the mounting system of Whitener '058 would have to have fuel pipes in it that brought fuel to the engines so that they worked from fuel tanks that are inside the wing boxes (111 and 112).

Therefore it would have been obvious to someone of ordinary skill in the art to have fuel tanks in the wing boxes and fuel pipes in the pylons in order to reduce the size and weight of the fuel system.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) in view of Gebhard (US Patent #5145129) and Whitener (US Patent #4165058) as applied to claim 13 above, and further in view of Moller (US Patent #6808140).

p. For Claim 14, Jones '355, Gebhard '129, and Whitener '058 are silent about the engines being rotatable, however, figures 8 and 9 of Moller '140 teach engines (16) that rotate. Therefore, it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355, Gebhard '129, and Whitener '058 with the rotatable engines of Moller '140 in order to have an aircraft that has vertical take off and landing capabilities.

q. For Claim 15, figure 2 of Jones '355 discloses elevators (38L and 38R) on the rear wing.

11. Claim 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) as applied to claim 1 above, and further in view of Mutrux (US Patent #4196877). Jones '355 is silent about the use of a VTOL rotor in the center opening, however, figure 1 of Mutrux '877 teaches a VTOL rotor (15) in the center opening of the aircraft. Therefore it would have been obvious to someone of ordinary skill in the art at

the time of the invention to modify Jones '355 with the rotor of Mutrux '877 in order to create a VTOL aircraft that has trust that is approximately in the middle of the aircraft to increase the stability of the aircraft while moving vertically.

12. Claim 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (US Patent #5520355) as applied to claim 1 above, and further in view of Arlin (US Patent 3082977). Jones '355 is silent about jet vents on the periphery of the aircraft, however, figure 1 of Arlin '977 teaches jet vents (50) in the periphery of the aircraft. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Jones '355 with the vents of Arlin '977 in order to provide additional lift forces for the aircraft when hovering.

Allowable Subject Matter

Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. BONZELL whose telephone number is (571)270-3663. The examiner can normally be reached on M-Th 8-5;.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. J. B./
Examiner, Art Unit 3644

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Supervisory Patent Examiner, Art
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pjb